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ABSTRACT

Procedures in developing a 66-minute film entitled "Natural Communities of Florida; Physical Factors and Distribution" and presented in this summary report. Production of the film was undertaken in an attempt to provide a more effective means of presenting basic ecological principles to students in introductory, college level biology courses. The report summarizes the situation of the biology courses offered at the University of South Florida; the value of including ecological principles in biology courses; and the need for developing a relevant film for these courses. To this end, the film produced examines six major natral communities found in Florida: Pine Flatwoods, Sandhill Association, Sand Pine Scrub, Hardwood Hammocks, Coastal Strand, and the Everglades. Depicted in each community is the general appearance, important vegetation, the soil, and some of the interrelationships between animals and plants. Also, the effects of important physical factors are illustrated. In conclusion, the report discusses results in class use of the film. (BL)

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University of South Florida

August 31, 1970

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Summary

In an attempt to provide a more effective means of presenting basic ecologic principles to students in introductory biology courses, we have produced a sixty-six minute color film entitled "Natural Communities of Florida; Physical Factors and Distribution." During the two reels of the film six major communities are examined. The film emphasizes a few aspects of the composition and appearance of each community and the effects of one or two physical factors on its distribution.

Introduction

The effective presentation of ecological principles is a difficult task in any introductory course in biology. However, such a presentation is important because it may be used to show the application of principles from lower levels of organization in the study of communities, to illustrate ecological principles, to interest students in their surroundings, and to introduce some of the most important problems of our day.

The impact of this presentation depends in part on the methods used. One valuable method entails the student's observation of a natural community and the formation in his mind of an idealized picture of this community. Direct field experience is obviously the best answer but the time and travel necessary frequently makes this impossible in the large-enrollment courses usually given to beginning students.

Problems of this nature are even more acute in a terminal course such as the general education biology course, CBS 205-206-207, Principles of Modern Biology, offered at the University of South Florida. An approach that answers the problems encountered in this course should have wide applicability on other introductory courses.

In our general education biology course we have attempted to introduce students to the principles of several important areas of biology ranging from the level of molecules to that of ecosystems. We have emphasized particularly the development of an understanding of organisms by presenting selected principles and by practicing problem solving and interpretation of semi-scientific articles. Approximately a thousand students a year pass through the three-quarter course.

In essence, ecology is the capstone of this course because it requires the application of principles considered in all of the earlier sections. Within a four to eight week section on ecology we have examined, in order, the physical aspects of the environment, energy flow in the ecosystem, interactions between organisms, ecological biogeography, the marine environment,

and some of the problems of environment currently facing man.

The importance of the topic of biogeography to the section on ecology can be underscored by noting the kinds of things we attempt to do with this topic. It serves as a source of illustrations for previous material in the section. For example, the study of the distribution of communities necessitates a review of the physical factors of the environment and furnishes striking examples of the potency of these factors. By the use of judicious examples the operation of a large number of factors can be demonstrated in a relatively small area.

When the University of South Florida first opened we were able to take students to several nearby communities. Growth of classes, changes in schedules and changes in the area soon forced the abandonment of these trips. We next tried using a combination of 2 x 2 slides and movies. The initial introduction presented the major types of Florida communities together with a brief mention of some of the factors influencing their distribution. These presentations were illustrated by 2 x 2 slides that we had taken. Subsequent discussions of biogeography were aided by the use of short movies on the major biomes.

We found this treatment to be lacking in two ways. First, the slides do not seem to give the students any "feeling" or perspective for the communities. Rather than giving the students anything resembling a personal experience with the community, they seem to give him the impression of a series of facts about it.

Second, although several of the commercially available movies were excellent in many ways, their discussion was usually limited to the changes in a community through a year and to a few interesting interactions. Rarely was any attempt made to analyze the distribution of the community in terms of the physical factors of the environment.

Methods

In order to improve our presentation of biogeography by more nearly achieving for each student a first-hand acquaintanceship with several natural communities, we have produced a film entitled "The Natural Communities of Florida: Physical Factors and Distribution."

For this film we selected a number of sites in the state which we felt exhibited the typical appearance for each of six major types of natural communities. In each community, long shots were taken to use in giving a general impression of the community. Footage of the more important trees, of a few shrubs and herbs, and of the soil were also taken. Representative animals that we happened to find were photographed but many other animals

were brought to us by friends. Striking effects of physical factors were searched out.

After most of the footage had been taken we organized it into a sequence that we felt produced a smooth progression of ideas. This version of the film was shown to six classes that were studying the natural communities portion of our non-majors biology course. Comments and possible improvements were elicited from these students. These proved to be of marked value in the final editing of the film and pointed out a few sections that needed to be re-arranged or for which additional scenes were desirable.

We originally planned to evaluate the film as a teaching tool by showing students the film and then comparing their success on selected test items with the performance we had previously measured of a group of students not shown the film. However, our general education biology course has undergone such a drastic revision that we feel we can no longer attach any significance to such a comparison.

Results

We have produced a color film of sixty-six minutes duration for use in introducing the major communities found in Florida and several aspects of their ecology.

By means of this film we visit Pine Flatwoods, Sandhill Association, Sand Pine Scrub, Hardwood Hammocks, Coastal Strand, and the Everglades. The Pine Flatwoods are visited first because they are widely distributed in Florida. Sandhill Association and Sand Pine Scrub follow because they are more closely allied to Pine Flatwoods than are the others. The second reel of the film starts with Hardwood Hammocks and then moves to the less common, seral communities of Coastal Strand and the Everglades.

In each of these communities we examine the general appearance, some of the more important vegetation, the soil, and some of the inter-relationships between animals and plants. The effects of the most important physical factors are illustrated.

None of the communities is described in detail. This is not our purpose. We have found that interest in such a discussion flags rapidly in a freshman class. We feel that we strike a meaningful balance between the essential introduction of various species of plants, the discussion of physical factors, and the more interesting features such as animal inhabitants.

The length of each reel of the film is shorter than we originally planned. In the standard fifty-minute class period, the present format allows time after the film for discussion or for summary of the major points. We, as instructors, have found this very helpful and the student response indicates that they are more at ease with this approach.

At the suggestion of the students we shortened the narration markedly and used no background music or effects. This will allow time for assimilation of each point and for some note-taking, and encourages attention to the ideas of the film rather than to the sound track.

Only a brief allusion is made to the problems man is causing in the environment. The basic aim of the film is to present the principles upon which other considerations can be based but not to examine any particular area of application.